UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, ILLINOIS 60604

DATE: 07/10/2018

SUBJECT: CLEAN AIR ACT INSPECTION REPORT
AK Steel Corporation, Middletown, Ohio

FROM: Gina Harrison, Environmental Scientist
AECAB (MN/OH)

THRU: Brian Dickens, Section Chief
AECAB (MN/OH)

TO: File

BASIC INFORMATION

Facility Name: AK Steel Corporation Middletown Works No. 2 Coke Plant

Facility Location: 1801 Crawford Street, Middletown, Ohio 45044

Date of Inspection: May 8, 2018

EPA Inspector(s):

1. Gina Harrison, Environmental Scientist
2. Marie St. Peter, Environmental Engineer
3. Patrick Miller, Environmental Engineer

Other Attendees

1. Scott Hamilton, Environmental Scientist, U.S. EPA Region 5 Air Monitoring and Analysis Section
2. Justin Coughlin, Environmental Scientist, U.S. EPA Region 5 Air Monitoring and Analysis Section
3. Jeff Carney, Operations Manager, AK Steel No. 2 Coke Plant
4. Chris Potts, Environmental Manager, AK Steel No. 2 Coke Plant
5. Mike Bathe, Environmental Engineer, AK Steel No. 2 Coke Plant
6. Jim Kemp, Remediation Manager Environmental Affairs, AK Steel No. 2 Coke Plant
7. Ron Toth, Supervisor, Fosbel (contractor to AK Steel No. 2 Coke Plant)
8. Ciara Oehring, Environmental Compliance Specialist, Southwest Ohio Air Quality Agency

9. Kerri Castlen, Environmental Compliance Supervisor, Southwest Ohio Air Quality Agency
10. Mike Kramer, Environmental Compliance Supervisor, Southwest Ohio Air Quality Agency
11. Amy Koesterman, Environmental Compliance Specialist, Southwest Ohio Air Quality Agency

Purpose of Inspection: Coke plant inspection

Facility Type: Metallurgical coke plant

Arrival Time: 9:36 AM EDT
Departure Time: 12:55 PM EDT

Inspection Type:
☒ Unannounced Inspection
☐ Announced Inspection

OPENING CONFERENCE

☒ Credentials Presented
☒ CBI warning to facility provided

The following information was obtained verbally from Mr. Carney unless otherwise noted.

Process Description:
AK Steel Middletown Works Wilputte Battery manufactures metallurgical coke in one 76-oven four meters tall (in height) vertical flue byproduct coke oven battery and uses one refractory quench tower to quench coke after pushing. The battery and quench tower have been operating since the 1950s. Each of the 76 ovens has two accessible sides described in the permit as the coke side and the push side, for charging and pushing, respectively. Each side of the battery contains two doors per oven – a vertically-oriented, slot type oven door and a chuck door near the top of the oven door.

Production starts around 11 am daily when the coke ovens are charged with a coal blend by transferring coal from the onsite coal bunker into a larry car, positioning the car over the empty oven, and discharging the coal, through a charging port on top of the battery, into the oven.

The coal is heated in the ovens to approximately 2,000 degrees Fahrenheit for a period of approximately 30 hours. The coking process generates coke oven gases, which are drawn away from the ovens to a collection main. The collection main, which serves the entire battery, directs the coke oven gas to the facility's coke by-product recovery plant where condensable materials (i.e., tars and light oils) are removed from the coke oven gas.

Once the coking process has completed, doors along the side of the ovens are opened, and the coke is pushed from the ovens into a railcar called a quench car. The quench car then transports the coke to a quench tower, where water is poured onto the coke in order to cool it. The quenched coke is then dumped onto a coke wharf to drain any excess quench water and to allow the coke to cool further.

A conveyor system then transports the cooled coke to a screening building. The screening building contains a single deck vibrating screen where furnace-sized coke is extracted and subsequently discharged through chutes to railcars. Coke breeze is removed through a discharge chute and transferred to a coke breeze bin. The coke breeze is removed from the bin and transported offsite by trucks.

The raw coke oven gas that enters the byproduct recovery plant is first sprayed with a flushing liquor to shock cool the inlet stream to about 175°F. The cooled coke oven gas is then directed to primary coolers to lower the temperature of the gas even further (to approximately 100°F). The flushing liquor and condensate generated by the cooling process drop down into a tar decanter. The tar removed from the decanter is collected and either sold to offsite customers or blended into the charging coal at the coal preparation area.

The cooled coke oven gas exits the primary coolers and is pulled by an exhauster operated at the byproduct plant through a series of separation units including: tar precipitators, an ammonia scrubber, a light oil scrubber, wash oil preheaters, and a light oil distillation process. The "cleaned" coke oven gas is then vented to a number of onsite and offsite combustion units as a fuel source. The coke oven gas is also recirculated along with blast furnace gas to provide heat to the coke oven battery.

Staff Interview: According to Mr. Carney, the coke ovens are original to the plant and haven't been substantially modified since they were built in the 1950s. The exhauster that pulls coke oven gas from the ovens to the byproduct plant for further processing is controlled both at the byproduct plant control room and by PLC to auto adjust damper settings that control the flow of coke oven gas to the byproduct plant. The quench tower baffles were replaced in December 2017 with dual layer, chevron design baffles to better control PM emissions. The plant was just beginning a ramp up to a daily 60-oven push schedule which will last through the summer.

In accordance with permit requirements, AK Steel personnel perform battery observations on a daily basis to identify potential fugitive emissions from the battery. When fugitive emissions, or leaks, are observed, AK Steel's contractor Fosbel applies silica-based luting materials to seal joints that appear to be leaking visible emissions. According to Mr. Carney and Mr. Toth, areas likely to leak include jointure between the goosenecks and the collection main, offtake lids, trunks, and gaskets, and oven doors. The silica welds typically hold for about 6 months, up to one year. The last few days of traverses and observations performed by AK Steel and Fosbel identified two leaking ovens, which were promptly added to Fosbel's daily repair schedule and repaired.

TOUR INFORMATION

EPA toured the facility: Yes

Data Collected and Observations:

Two EPA inspectors traversed the battery doors beginning at 10:43 am and ascended the battery at 11 am. Inspectors observed 4 production cycles from start (flushing and charge) to finish (push and quench). The two inspectors descended the battery at 12:15. Photos were taken during this time and are attached to this report as Attachment A: AK Inspection Photos (in CD format), with a printed log attached as Attachment B: AK Inspection Photo Log.

During this period a third inspector observed charges and pushes at an area to the slight northwest of the battery using a digital opacity camera system (DOCS). Pictures and videos are archived on compact discs, and the results will be documented separately.

Inspectors noted visible emissions leaking from oven doors and components, as follows:

Time	Oven Number	Area of Oven Leaking
10:43 am	1	Push side, top of oven door
10:43 am	3	Push side, top of oven door and standpipe
10:44 am	5	Push side, top of oven door and standpipe
10:45 am	7	Push side, top of oven door
10:45 am	10	Push side, top of oven door and standpipe
10:45 am	11	Push side, top of oven door
10:45 am	16	Push side, top of oven door
10:46 am	19	Push side, top of oven door
10:46 am	22	Push side, top of oven door
10:46 am	24	Push side, top of oven door and standpipe

10:46 am	30	Push side, side of oven door
10:47 am	38	Push side, top of oven door and chuck door
10:47 am	40	Push side, top of oven door
10:47 am	42	Push side, top of oven door

Inspectors ascended the battery and observed visible emissions leaking from the following ovens' offtake piping and oven components from 11:00 to 11:18 am:

Time	Oven Number	Area of Oven Leaking
11:00 am	76	Coke side, offtake piping
11:00 am	74	Coke side, valve and offtake piping
11:01 am	70	Coke side, offtake piping
11:01 am	72	Coke side, offtake piping
11:02 am	69	Coke side, offtake piping
11:04 am	68	Coke side, offtake piping
11:04 am	64	Coke side, offtake piping
11:04 am	61	Coke side, offtake piping
11:05 am	60	Coke side, offtake piping
11:06 am	50	Coke side, offtake piping
11:06 am	48	Coke side, offtake piping
11:08 am	46	Coke side, offtake piping and gasket leading to collector main
11:09 am	42	Coke side, offtake piping

11:12 am	38	Coke side, offtake piping and gasket leading to collector main
11:12 am	34	Coke side, offtake piping
11:14 am	31	Coke side, offtake piping
11:14 am	27	Coke side, offtake piping
11:15 am	25	Coke side, offtake piping
11:17 am	24	Coke side, offtake piping
11:18 am	18	Coke side, offtake piping
11:18 am	13	Coke side, offtake piping

Inspectors observed four production cycles and then descended the coke battery at around 12:15. Inspectors observed visible emissions leaking from the following ovens, offtake piping, and oven components from 12:30 and 12:52 pm:

Time	Oven Number	Area of Oven Leaking
12:30 pm	1	Push side, top of oven door and chuck door
12:30 pm	3	Push side, top of oven door
12:33 pm	5	Push side, top of oven door
12:34 pm	7	Push side, top of oven door and chuck door
12:36 pm	10	Push side, top of oven door and chuck door, and standpipe
12:36 pm	11	Push side, top of oven door and chuck door
12:36 pm	16	Push side, top of oven door
12:37 pm	19	Push side, top of oven door and chuck door

12:37 pm	22	Push side, top of oven door
12:37 pm	24	Push side, chuck door
12:38 pm	27	Push side, top of oven door
12:43 pm	40	Push side, top of oven door
12:43 pm	42	Push side, top of oven door
12:45 pm	48	Push side, top of oven door
12:47 pm	54	Push side, top of oven door and standpipe
12:47 pm	58	Push side, top of oven door and standpipe
12:48 pm	63	Push side, top of oven door, gooseneck, and standpipe
12:48 pm	67	Push side, top of oven door and standpipe
12:49 pm	70	Coke side, top of door and standpipe
12:50 pm	72	Coke side, top of door and standpipe
12:50 pm	69	Coke side, top of door and standpipe
12:50 pm	68	Coke side, top of door and standpipe
12:52 pm	64	Coke side, top of door and standpipe
12:52 pm	71	Coke side, top of door and standpipe

Observations were performed in accordance with Ohio SIP Rules 3745 17-03(B), 3745 17-07(B)(2)(d)(ii) and 3745 17-07(B)(2)(b). OAC Rule 3745 17-07(B)(2)(d)(ii) requires that at no time shall there be visible fugitive particulate emissions from more than ten percent of the oven

doors, and 3745 17-07(B)(2)(b) requires that at no time shall there be visible fugitive particulate emissions from more than 10% of the offtake piping. Based on the data collected during observations at oven doors, visible fugitive particulate emissions were leaking from AK Steel's Wilputte Battery from 14 out of 152 doors during one observation, at a rate of 9.2%, and from 24 out of 152 doors during the second observation, at a rate of 15.8% . Based on observations at offtake piping, visible fugitive particulate emissions were leaking from AK Steel's offtake piping, as defined at OAC 3745-17-03(B), from offtake piping components associated with 21 out of 152 ovens, at a rate of 13.8%.

Separately, two EPA Region 5 scientists performed Geospatial Monitoring of Air Pollution (GMAP), using a portable meteorological tower, a DUVAS analyzer, and Picarro cavity ringdown spectroscopy analyzer, to measure BTEX, SO2, and other VOC at fixed points near the battery. The GMAP report will be documented separately.

Photos and/or Videos: were taken during the inspection.

Field Measurements: were taken during this inspection.

CLOSING CONFERENCE

We thanked AK Steel personnel for their time and told that we would follow up with a copy of the inspection report when it was completed. We confirmed that nothing we had discussed was Confidential Business Information. We stated that we may issue a Section 114 Information Request or follow up with questions via phone or email.

ATTACHMENTS

Attachment A: AK Inspection Media (in CD format)

Attachment B: AK Inspection Media Log

SIGNATURES

Report Author: _____ Date: 7/12/2018

Section Chief: _____ Date: 7/12/18

Attachment B: AK Inspection Media Log

Photo Log

Image Number	File Name	Date and Time (incl. time zone and DST)	Latitude and Longitude	Description of Image
1	P5080001.JPG	7/10/2018 20:48		Combustion stack
2	P5080002.JPG	7/10/2018 20:48		Flaring
3	P5080003.JPG	7/10/2018 20:48		Opacity from BOF and flaring
4	P5080004.JPG	7/10/2018 20:48		Opacity from BOF and flaring
5	P5080005.JPG	7/10/2018 20:48		Opacity from BOF and flaring
6	P5080008.JPG	7/10/2018 20:49	39.478452, -84.386352	Coke plant opacity
7	P5080009.JPG	7/10/2018 20:49	39.478435, -84.386293	Coke plant
8	P5080010.JPG	7/10/2018 20:49	39.478333, -84.386111	Opacity from BOF/taconite area
9	P5080011.JPG	7/10/2018 20:49	39.478333, -84.386111	Opacity from BOF/taconite area
10	P5080012.JPG	7/10/2018 20:49	39.481013, -84.385482	Coke plant catwalk
11	P5080013.JPG	7/10/2018 20:49	39.481013, -84.385482	Opacity from coke ovens
12	P5080014.JPG	7/10/2018 20:49	39.480973, -84.385472	Opacity from coke ovens
13	P5080015.JPG	7/10/2018 20:49	39.480973, -84.385472	Opacity from coke ovens
14	P5080016.JPG	7/10/2018 20:49	39.480295, -84.3844	Opacity from offtake piping
15	P5080017.JPG	7/10/2018 20:49	39.480192, -84.384358	Opacity from offtake piping

16	P5080018.JPG	7/10/2018 20:49	39.480073, -84.384357	Opacity from offtake piping
17	P5080019.JPG	7/10/2018 20:49	39.480025, -84.38436	Opacity from offtake piping
18	P5080020.JPG	7/10/2018 20:49	39.480023, -84.384348	Opacity from offtake piping
19	P5080021.JPG	7/10/2018 20:49	39.480023, -84.384348	Opacity from offtake piping
20	P5080022.JPG	7/10/2018 20:49	39.48005, -84.384362	Opacity from offtake piping
21	P5080023.JPG	7/10/2018 20:49	39.480048, -84.384355	Opacity from offtake piping
22	P5080024.JPG	7/10/2018 20:49	39.480048, -84.38434	Opacity from offtake piping
23	P5080025.JPG	7/10/2018 20:49	39.480045, -84.384332	Opacity from offtake piping
24	P5080026.JPG	7/10/2018 20:49	39.480018, -84.38441	Opacity from offtake piping
25	P5080027.JPG	7/10/2018 20:49	39.480018, -84.38441	Opacity from offtake piping
26	P5080028.JPG	7/10/2018 20:49	39.480018, -84.38441	Opacity from offtake piping
27	P5080029.JPG	7/10/2018 20:49	39.479998, -84.384412	Opacity from offtake piping
28	P5080030.JPG	7/10/2018 20:49	39.479997, -84.384412	Opacity from offtake piping
29	P5080031.JPG	7/10/2018 20:49	39.480005, -84.384423	Opacity from offtake piping
30	P5080032.JPG	7/10/2018 20:49	39.48, -84.384444	Opacity during production
31	P5080033.JPG	7/10/2018 20:49	39.480123, -84.384747	Jeff Carney, operations manager

32	P5080034.JPG	7/10/2018 20:49	39.479917, -84.384768	Opacity during production
33	P5080035.JPG	7/10/2018 20:49	39.479952, -84.384885	Opacity during production
34	P5080036.JPG	7/10/2018 20:49	39.479685, -84.385263	safety vest
35	P5080037.JPG	7/10/2018 20:49	39.479687, -84.385262	blurred photo of ovens
36	P5080038.JPG	7/10/2018 20:49	39.479687, -84.385262	Opacity near combustion stack
37	P5080039.JPG	7/10/2018 20:49	39.479697, -84.385168	Opacity near combustion stack
38	P5080040.JPG	7/10/2018 20:49	39.479727, -84.385108	Opacity near combustion stack
39	P5080041.JPG	7/10/2018 20:49	39.479722, -84.385	Opacity near combustion stack
40	P5080042.JPG	7/10/2018 20:49	39.479805, -84.385128	Opacity near combustion stack
41	P5080043.JPG	7/10/2018 20:49	39.479837, -84.38502	Opacity during production
42	P5080044.JPG	7/10/2018 20:49	39.479853, -84.385005	Opacity during production
43	P5080045.JPG	7/10/2018 20:49	39.479853, -84.385005	Opacity during production
44	P5080046.JPG	7/10/2018 20:49	39.479878, -84.385028	Opacity during production
45	P5080047.JPG	7/10/2018 20:49	39.479862, -84.385018	Opacity during production
46	P5080048.JPG	7/10/2018 20:49	39.479912, -84.384808	Opacity near larry car during production
47	P5080049.JPG	7/10/2018 20:49	39.479912, -84.384808	Opacity near larry car during production

48	P5080050.JPG	7/10/2018 20:49	39.479913, -84.384817	Opacity during production
49	P5080051.JPG	7/10/2018 20:49	39.479913, -84.384817	Opacity during production
50	P5080052.JPG	7/10/2018 20:49	39.479913, -84.384817	Opacity during production
51	P5080053.JPG	7/10/2018 20:49	39.479913, -84.384817	Opacity during production
52	P5080054.JPG	7/10/2018 20:49	39.479907, -84.384822	Opacity during production
53	P5080055.JPG	7/10/2018 20:49	39.479905, -84.384815	Opacity during production
54	P5080056.JPG	7/10/2018 20:49	39.479903, -84.384812	Opacity during production
55	P5080057.JPG	7/10/2018 20:50	39.4799, -84.384813	Opacity during production
56	P5080058.JPG	7/10/2018 20:50	39.479902, -84.384813	Opacity during production
57	P5080059.JPG	7/10/2018 20:50	39.479902, -84.384815	Opacity during production
58	P5080060.JPG	7/10/2018 20:50	39.479902, -84.384815	Opacity during production
59	P5080061.JPG	7/10/2018 20:50	39.479903, -84.384815	Opacity during production
60	P5080062.JPG	7/10/2018 20:50	39.479903, -84.384815	Opacity during production
61	P5080063.JPG	7/10/2018 20:50	39.479902, -84.384815	Opacity during production
62	P5080064.JPG	7/10/2018 20:50	39.479903, -84.384815	Opacity during production
63	P5080065.JPG	7/10/2018 20:50	39.479893, -84.384818	Opacity during production

64	P5080066.JPG	7/10/2018 20:50	39.479893, -84.384818	Opacity during production
65	P5080067.JPG	7/10/2018 20:50	39.479903, -84.384825	Opacity during production
66	P5080068.JPG	7/10/2018 20:50	39.479903, -84.384825	Opacity during production
67	P5080069.JPG	7/10/2018 20:50	39.479902, -84.384832	Opacity during production
68	P5080070.JPG	7/10/2018 20:50	39.479923, -84.384853	Larry car rail, topside
69	P5080071.JPG	7/10/2018 20:50	39.479923, -84.384853	Larry car, rail, and pushermen
70	P5080072.JPG	7/10/2018 20:50	39.4799, -84.384848	Opacity from offtake piping
71	P5080073.JPG	7/10/2018 20:50	39.4799, -84.384848	Opacity from offtake piping
72	P5080074.JPG	7/10/2018 20:50	39.4799, -84.384848	Opacity from offtake piping
73	P5080075.JPG	7/10/2018 20:50	39.479902, -84.384852	Opacity from offtake piping
74	P5080076.JPG	7/10/2018 20:50	39.4799, -84.384855	Opacity from offtake piping
75	P5080077.JPG	7/10/2018 20:50	39.479905, -84.384858	Opacity from offtake piping
76	P5080078.JPG	7/10/2018 20:50	39.479907, -84.384855	Opacity during production, pushermen with silica cans
77	P5080079.JPG	7/10/2018 20:50	39.47991, -84.384858	Opacity from offtake piping
78	P5080080.JPG	7/10/2018 20:50	39.47991, -84.384858	Opacity during production

79	P5080081.JPG	7/10/2018 20:50	39.47991, -84.384857	Opacity from offtake piping
80	P5080082.JPG	7/10/2018 20:50	39.47991, -84.384858	Opacity from offtake piping and near larry car
81	P5080083.JPG	7/10/2018 20:50	39.47991, -84.384858	Opacity from offtake piping and near larry car
82	P5080084.JPG	7/10/2018 20:50	39.47991, -84.384858	Opacity from offtake piping and near larry car
83	P5080085.JPG	7/10/2018 20:50	39.47991, -84.384858	Opacity from offtake piping and near larry car
84	P5080086.JPG	7/10/2018 20:50	39.47991, -84.384858	Opacity from offtake piping and near larry car
85	P5080087.JPG	7/10/2018 20:50	39.47991, -84.384858	Opacity from offtake piping and near larry car
86	P5080088.JPG	7/10/2018 20:50	39.47991, -84.384858	Opacity from offtake piping and near larry car
87	P5080089.JPG	7/10/2018 20:50	39.479915, -84.384865	Opacity from offtake piping and near larry car, pusherman near offtake lid
88	P5080090.JPG	7/10/2018 20:50	39.479915, -84.384865	Opacity from offtake piping and near larry car, pusherman near offtake lid
89	P5080091.JPG	7/10/2018 20:50	39.479915, -84.384865	Pusherman near offtake lid

90	P5080092.JPG	7/10/2018 20:50	39.479915, -84.384865	Pusherman near offtake lid
91	P5080093.JPG	7/10/2018 20:50	39.479915, -84.384865	Pusherman near offtake lid
92	P5080094.JPG	7/10/2018 20:50	39.479915, -84.384865	Pusherman near offtake lid
93	P5080095.JPG	7/10/2018 20:50	39.479937, -84.384878	Topside rail
94	P5080096.JPG	7/10/2018 20:50	39.479937, -84.384878	AK personnel topside during production
95	P5080097.JPG	7/10/2018 20:50	39.479937, -84.384855	Opacity from offtake piping
96	P5080098.JPG	7/10/2018 20:50	39.479935, -84.384857	Opacity from offtake piping
97	P5080099.JPG	7/10/2018 20:50	39.47993, -84.384853	Opacity from offtake piping
98	P5080100.JPG	7/10/2018 20:50	39.47993, -84.384853	Opacity during production
99	P5080101.JPG	7/10/2018 20:50	39.47993, -84.384853	Opacity from offtake piping
100	P5080102.JPG	7/10/2018 20:50	39.47993, -84.384852	Opacity from offtake piping
101	P5080103.JPG	7/10/2018 20:50	39.47995, -84.384867	Opacity from offtake piping
102	P5080104.JPG	7/10/2018 20:50	39.47995, -84.384867	Opacity from offtake piping
103	P5080105.JPG	7/10/2018 20:50	39.47995, -84.384867	Opacity from offtake piping
104	P5080106.JPG	7/10/2018 20:50	39.47995, -84.384867	Opacity from offtake piping
105	P5080107.JPG	7/10/2018 20:50	39.47995, -84.384867	Opacity from offtake piping

106	P5080108.JPG	7/10/2018 20:50	39.47995, -84.384865	Opacity during production
107	P5080109.JPG	7/10/2018 20:50	39.47995, -84.384865	Opacity during production
108	P5080110.JPG	7/10/2018 20:50	39.47995, -84.384865	Opacity from offtake piping, larry car, topside rail
109	P5080111.JPG	7/10/2018 20:50	39.479948, -84.384858	Opacity from offtake piping
110	P5080112.JPG	7/10/2018 20:50	39.479948, -84.38486	Opacity from offtake piping
111	P5080113.JPG	7/10/2018 20:50	39.479948, -84.38486	Opacity from offtake piping
112	P5080114.JPG	7/10/2018 20:50	39.479945, -84.384855	Opacity from offtake piping
113	P5080115.JPG	7/10/2018 20:50	39.479945, -84.384848	Opacity during production
114	P5080116.JPG	7/10/2018 20:50	39.479952, -84.384843	Opacity during production
115	P5080117.JPG	7/10/2018 20:50	39.479952, -84.384843	Opacity during production
116	P5080118.JPG	7/10/2018 20:50	39.479952, -84.384843	Opacity during production
117	P5080119.JPG	7/10/2018 20:50	39.479952, -84.384843	Opacity during production
118	P5080120.JPG	7/10/2018 20:50	39.479952, -84.384843	Opacity during production
119	P5080121.JPG	7/10/2018 20:50	39.479952, -84.384843	Opacity during production
120	P5080122.JPG	7/10/2018 20:50	39.479952, -84.384843	Opacity during production
121	P5080123.JPG	7/10/2018 20:50	39.479952, -84.384843	Opacity during production

122	P5080124.JPG	7/10/2018 20:50	39.479952, -84.384843	Opacity during production
123	P5080125.JPG	7/10/2018 20:50	39.479952, -84.384843	Opacity during production
124	P5080126.JPG	7/10/2018 20:51	39.479955, -84.384847	Opacity during production
125	P5080127.JPG	7/10/2018 20:51	39.479962, -84.384867	Opacity during production
126	P5080128.JPG	7/10/2018 20:51	39.479962, -84.384867	Opacity during production
127	P5080129.JPG	7/10/2018 20:51	39.479962, -84.384867	Opacity from offtake piping
128	P5080130.JPG	7/10/2018 20:51	39.479957, -84.384865	Opacity from offtake piping
129	P5080131.JPG	7/10/2018 20:51	39.479958, -84.384875	Opacity from offtake piping
130	P5080132.JPG	7/10/2018 20:51	39.479967, -84.384878	Opacity from offtake piping
131	P5080133.JPG	7/10/2018 20:51	39.479968, -84.384883	Opacity from offtake piping
132	P5080134.JPG	7/10/2018 20:51	39.479968, -84.384883	AK personnel topside during production
133	P5080135.JPG	7/10/2018 20:51	39.479968, -84.384883	Opacity during production
134	P5080136.JPG	7/10/2018 20:51	39.479772, -84.384625	Opacity from offtake
135	P5080137.JPG	7/10/2018 20:51	39.479772, -84.384625	Opacity from offtake
136	P5080139.JPG	7/10/2018 20:51	39.479503, -84.384225	Offtakes and standpipes 68 and 69
137	P5080140.JPG	7/10/2018 20:51	39.47952, -84.384207	Offtakes and standpipes 68 and 69

138	P5080141.JPG	7/10/2018 20:51	39.4795, -84.384183	Offtakes and standpipes 68 and 69
139	P5080142.JPG	7/10/2018 20:51	39.479498, -84.384182	Collector main over 67-71
140	P5080143.JPG	7/10/2018 20:51	39.479498, -84.384182	Offtakes and standpipes 71-72
141	P5080144.JPG	7/10/2018 20:51	39.479498, -84.384182	Offtakes and standpipes 74-76
142	P5080145.JPG	7/10/2018 20:51	39.479498, -84.384182	Offtakes and standpipes 74-76
143	P5080146.JPG	7/10/2018 20:51	39.479498, -84.384175	Offtakes and standpipes 66-70

Video Log

File Name	Date and Time (incl. time zone and DST)	Latitude and Longitude	Description of Video
P5080006.MOV	7/10/2018 20:48		Accidental video started
P5080007.MOV	7/10/2018 20:48		Coke Battery - Push Side